National Defense Industrial Association

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1 IS SLIDE

What is Network Centric Operations?

- **Network Centric Operations (NCO) is an Information Superiority – enabled concept of operations that describes the way U.S. forces organize and fight in the Information Age**
- **NCO generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, high tempo of operations, greater lethality, increased survivability and a degree of self synchronization**
- **NCO translates information superiority into combat power by effectively linking friendly forces within the battlespace, providing a much improved shared awareness of the situation, and enabling more rapid, effective decision making**

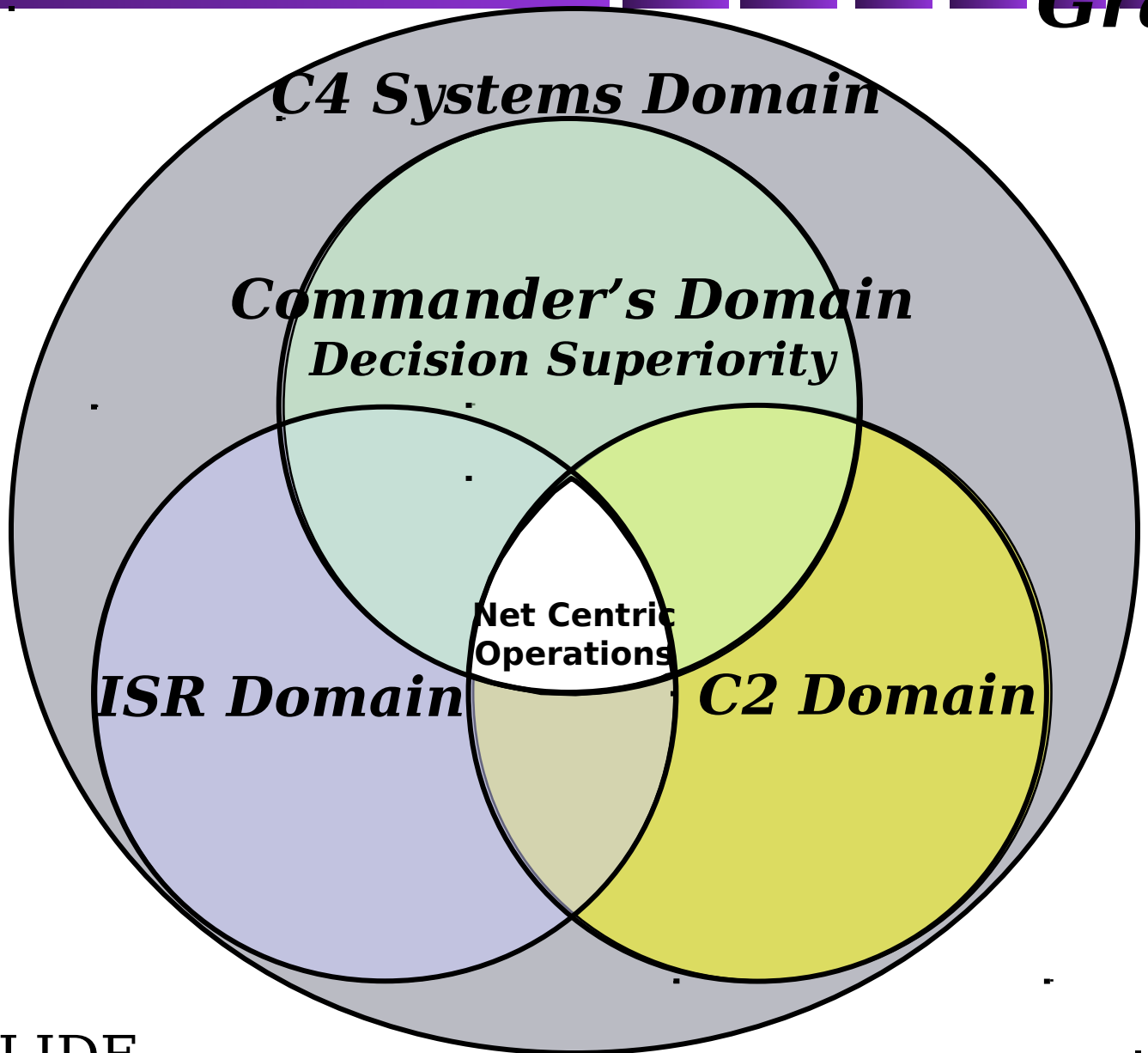
Source: Director Force Transfor

Net-Centric Methodology Compared with Current Approach

CURRENT	FUTURE
Single/Common Operational Picture (COP)	User Defined Operational Picture (UDOP)
Autonomous operations	Self-synchronizing operations
Broadcast information push	Information Pull “Smart Pull”
Individual	Collaboration
Stovepipes	Communities of Interest
Task, Process, Exploit, Disseminate (TPED)	Task, Post, Process, Use (TPPU)
Multiple data calls, duplication	Only Handle Information Once (OHIO)
Private data / Need to Know Basis	Shared data / Need to Share Basis
Perimeter, one-time security	Persistent, continuous Info Assurance
Bandwidth limitations	Bandwidth on demand
Circuit-based transport	Internet Protocol-based transport
Single points of failure	Diverse routing linked to quality of service
Separate application-based infrastructures	Enterprise services
Customized, platform-centric IT systems	COTS-based, net-centric capabilities

*** Taken From OASD/NII AFCEA Presentation**

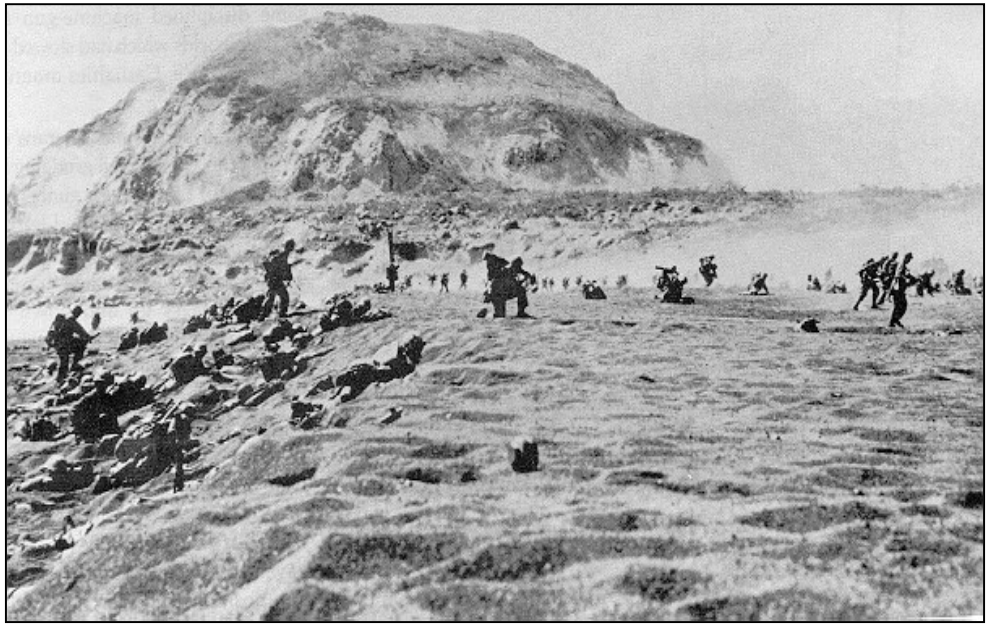
The Network as the "Center of Gravity"



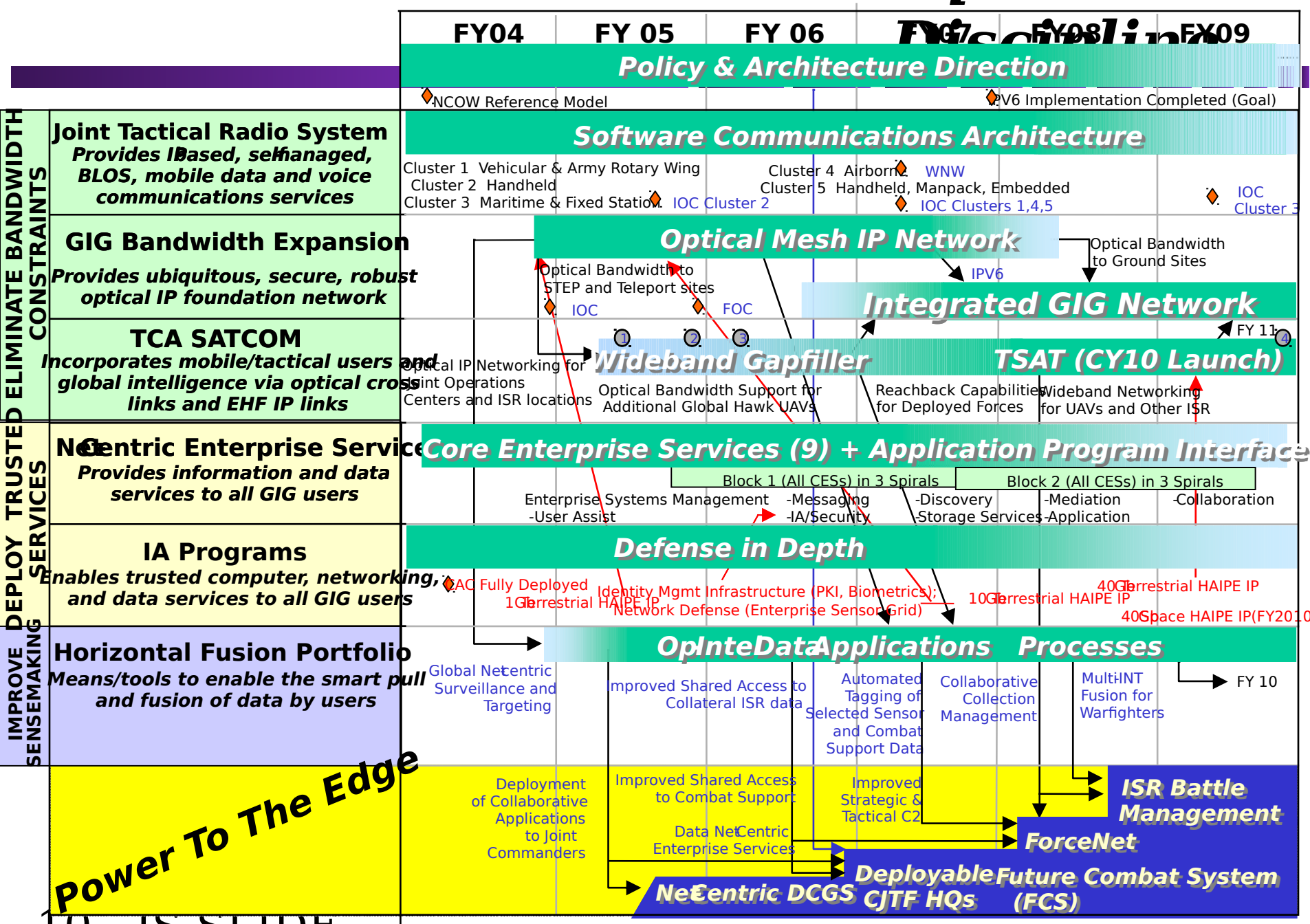
Configuration Management

“If we did configuration management on our ships and aircraft like we do on our networks…our ships wouldn’t sail and aircraft wouldn’t fly.”

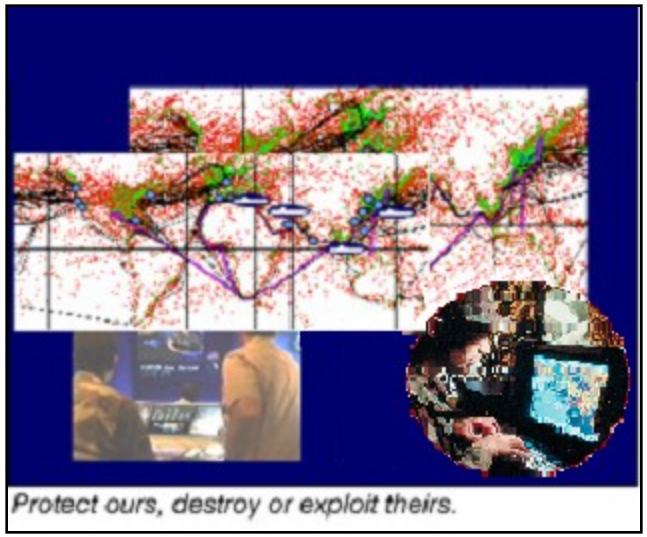
The Beachhead at Iwo Jima

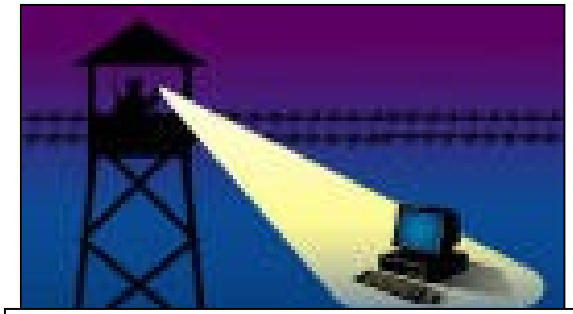


Acquisition


FY04
FY 05
FY 06
FY07
FY08
FY09
Policy & Architecture Direction
NCOW Reference Model
IPV6 Implementation Completed (Goal)
ELIMINATE BANDWIDTH CONSTRAINTS
Joint Tactical Radio System
Provides IP based, self managed, BLOS, mobile data and voice communications services
Software Communications Architecture
Cluster 1 Vehicular & Army Rotary Wing
Cluster 2 Handheld
Cluster 3 Maritime & Fixed Station
IOC Cluster 2
Cluster 4 Airborne
WNW
Cluster 5 Handheld, Manpack, Embedded
IOC Clusters 1,4,5
IOC Cluster 3
GIG Bandwidth Expansion
Provides ubiquitous, secure, robust optical IP foundation network
Optical Mesh IP Network
Optical Bandwidth to Ground Sites
IPV6
Optical Bandwidth to STEP and Teleport sites
IOC
FOC
Integrated GIG Network
FY 11
TCA SATCOM
Incorporates mobile/tactical users and global intelligence via optical cross links and EHF IP links
Wideband Gapfiller
TSAT (CY10 Launch)
Optical IP Networking for Joint Operations Centers and ISR locations
Optical Bandwidth Support for Additional Global Hawk UAVs
Reachback Capabilities for Deployed Forces
Wideband Networking for UAVs and Other ISR
DEPLOY TRUSTED SERVICES
Net Centric Enterprise Services
Provides information and data services to all GIG users
Core Enterprise Services (9) + Application Program Interfaces
Block 1 (All CESs) in 3 Spirals
Block 2 (All CESs) in 3 Spirals
Enterprise Systems Management
-User Assist
-Messaging
-IA/Security
-Discovery
-Storage Services
-Mediation
-Application
-Collaboration
IA Programs
Enables trusted computer, networking, and data services to all GIG users
Defense in Depth
AC Fully Deployed
1Gb Terrestrial HAIPE IP
Identity Mgmt Infrastructure (PKI, Biometrics); Network Defense (Enterprise Sensor Grid)
10Gb Terrestrial HAIPE IP
40Gb Terrestrial HAIPE IP
40Gb Space HAIPE IP(FY2010)
IMPROVE SENSEMAKING
Horizontal Fusion Portfolio
Means/tools to enable the smart pull and fusion of data by users
Op Inte Data Applications Processes
Global Net-centric Surveillance and Targeting
Improved Shared Access to Collateral ISR data
Automated Tagging of Selected Sensor and Combat Support Data
Collaborative Collection Management
Multi-INT Fusion for Warfighters
FY 10
Power To The Edge
Deployment of Collaborative Applications to Joint Commanders
Improved Shared Access to Combat Support
Data Net-Centric Enterprise Services
Improved Strategic & Tactical C2
ISR Battle Management
ForceNet
Deployable CJTF HQs
Future Combat System (FCS)
Net-Centric DCGS

Information Assurance

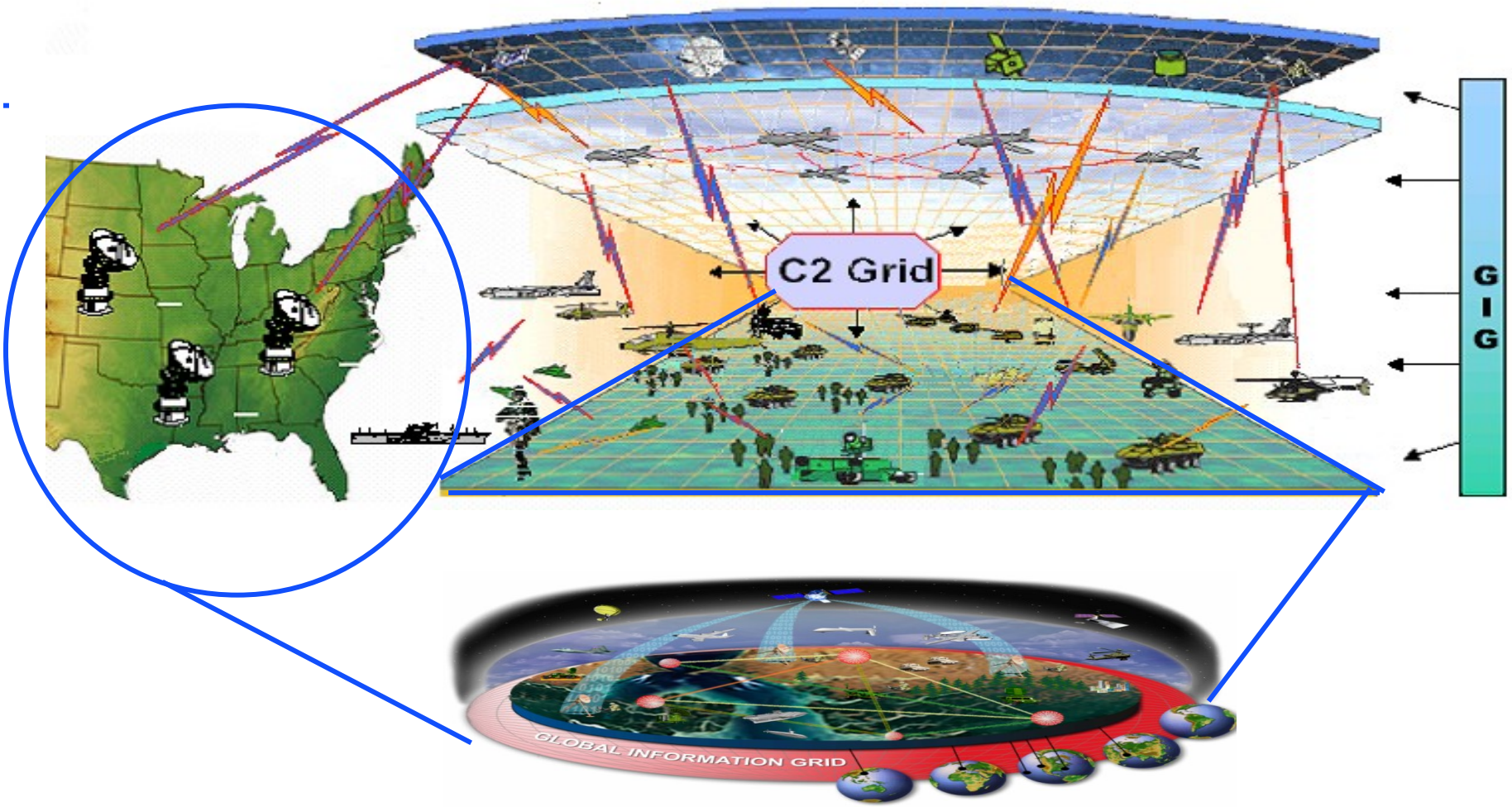




Realistic Risk Management

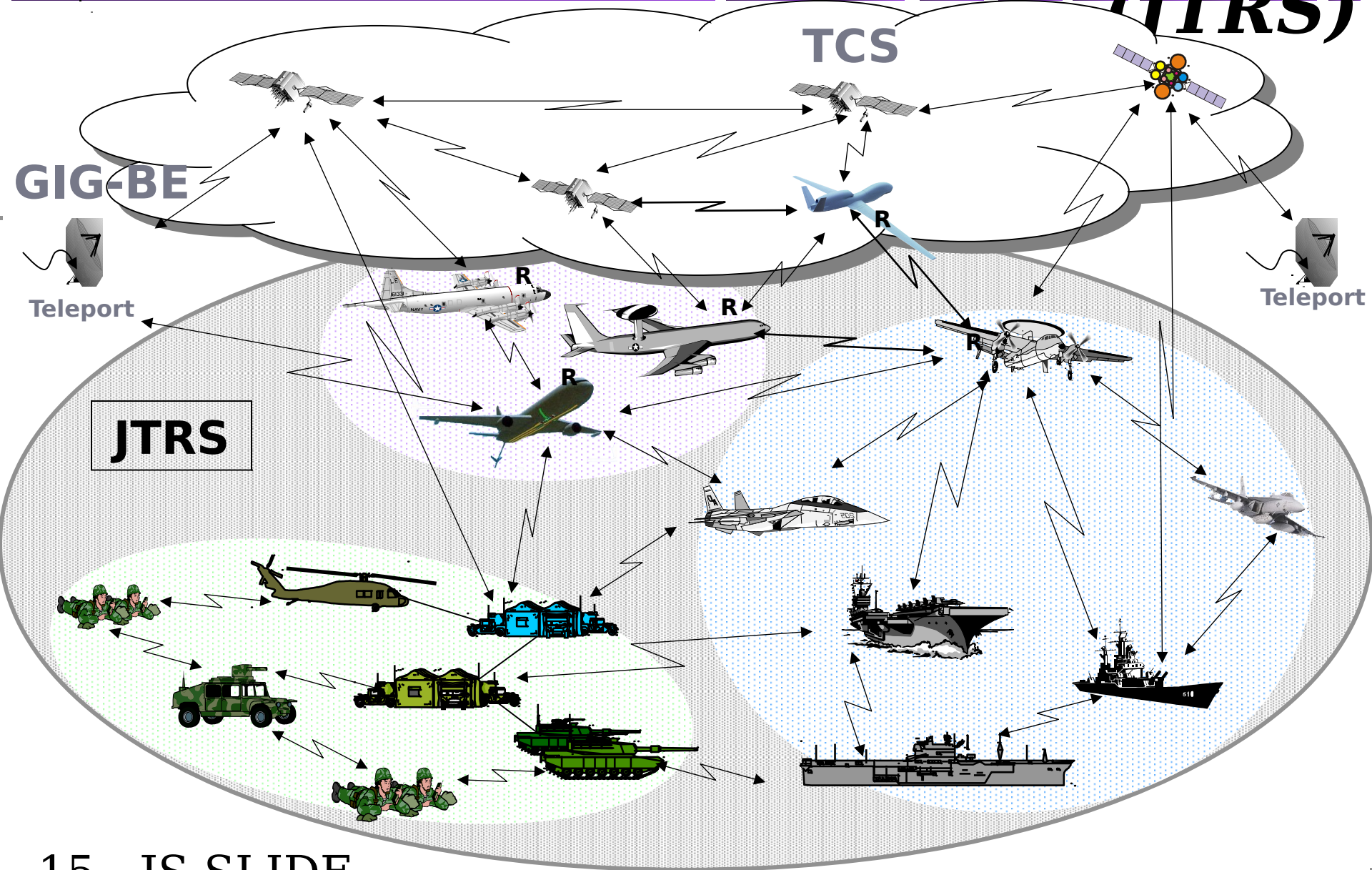
We must conduct Joint C4 Training…because lives depend on it!

Transport Systems



The Backbone of Transformational Communications

Joint Tactical Radio System (JTRS)



Deployable Joint Command and Control (DJC2)

Multi-National Information Sharing

In a Nutshell

- **Historic Opportunity…"The Department must align itself with the on-going information revolution…by developing information-enabled organizational relationships and operational concepts."**

- **"Transforming how we fight….it hinges on development of future joint warfighting concepts"**
  - **SECDEF's Transformation Planning Guidance (April 2003)**

Questions?

NDIA

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